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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,625	06/25/2003	Theodore M. Boyd-Davis	BING-1-1004	5054

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EXAMINER

TALBOT, MICHAEL

ART UNIT	PAPER NUMBER
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3722

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary

Application No.

10/606,625

Applicant(s)

BOYL-DAVIS ET AL.

Examiner

Michael W. Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-16,18-31 and 33-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-16,18-31 and 33-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>09/19/05, 11/21/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The objection to the drawings under 37 CFR 1.83(a) has been withdrawn due to Applicant's amendment filed 20 December 2005.

Specification

2. The objection to the disclosure has been withdrawn due to Applicant's amendment filed 20 December 2005.

Claim Rejections - 35 USC § 112

3. The rejection to the claims under 35 U.S.C. 112, second paragraph has been withdrawn due to Applicant's amendment filed 20 December 2005, however a new rejection has been applied under 35 U.S.C. 112, first and second paragraphs, due to Applicant's amendment filed 20 December 2005.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claims 1, 15 and 29, as a result of the Applicant's amendment filed 20 December 2005, now recite the claim limitation of "one or more tapered apertures" in lieu of the original claim limitation of "a plurality of apertures". It is unclear as to how the invention can function or be useful with a rack having a single or one tapered aperture, as now claimed, since it is best understood that a plurality of apertures is required for the apparatus to be functional.

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Furthermore, the specification and drawings do not support the claimed new subject matter of a rack comprising "one or more tapered apertures".

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear as to how the invention can function or be useful with a rack having a single or one aperture as now claimed. Furthermore, the specification and drawings do not support the claimed new subject matter of a rack comprising "one or more" apertures.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1,2,4 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Olsen '126. Olsen '126 shows in Figures 1-5 an apparatus comprising a track assembly adapted to be attached to a work piece including at least one rail (10) having a longitudinally-extending neutral axis and an integrally-formed rack comprising one or more tapered/wedge-shaped apertures (18 and Fig. 4) extending along a pitch line that at least approximates the longitudinally-extending neutral axis. Olsen '126 shows the track being substantially flat and having a width substantially greater than a thickness causing a stiffer bending moment that extends along the thickness direction and a more pliable bending moment that extends along the width direction.

It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

8. Claims 1,2,4 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Zeldman '536. Zeldman '536 shows in Figures 1-6 an apparatus comprising a track assembly adapted to be attached to a work piece including at least one rail (10) having a longitudinally-extending neutral axis and an integrally-formed rack comprising one or more tapered/wedge-shaped apertures (18,20,24 and Fig. 6) extending along a pitch line that at least approximates the longitudinally-extending neutral axis. Zeldman '536 shows the track being substantially flat and having a width substantially greater than a thickness causing a stiffer bending moment that extends along the thickness direction and a more pliable bending moment that extends along the width direction.

It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

9. Claims 1,2,5 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Brock et al. '865. Brock et al. '865 shows in Figures 1,2 and 4 an apparatus comprising a track assembly adapted to be attached to a work piece including at least one rail (30) having a longitudinally-extending neutral axis and an integrally-formed rack comprising one or more conically shaped apertures (32 and col. 3, lines 10-20) extending along a pitch line that at least approximates the longitudinally-extending neutral axis. Brock et al. '865 shows the track being substantially flat and having a width substantially greater than a thickness causing a stiffer bending moment that extends along the thickness direction and a more pliable bending moment that extends along the width direction.

It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

10. Claims 1,2,4,6,8-12,15,16,18,20,22-25,28-31,33,35-40 and 43-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Cable et al. '542. Cable et al. '542 shows in Figures 1-6 an apparatus comprising a track assembly adapted to be attached to a work piece (15) via vacuum cups (31) including at least one rail (18) having a longitudinally-extending neutral axis and an integrally-formed rack (10) with a plurality of tapered/wedge-shaped apertures (23) extending along a pitch line that at least approximates the longitudinally-extending neutral axis. Cable et al. '542 shows the track being substantially flat and having a width substantially greater than a thickness causing a stiffer bending moment that extends along the thickness direction and a more pliable bending moment that extends along the width direction. Cable et al. '542 shows a carriage (32) including a drive assembly being moveably (col. 2, lines 38-51) coupled to the track assembly (via wheels 30) and moveable relative to the translational axis (x-axis) via a drive motor (33) coupled to a drive gear (24) engaging the rack (col. 2, line 65 through col. 3, line 4). Cable et al. '542 shows the drive gear having a plurality of teeth operatively engaging apertures of the rack wherein the apertures are adapted to match a cross-sectional profile of the teeth (col. 2, lines 52-64). Cable et al. '542 shows the carriage supporting a manufacturing tool (11) to perform the manufacturing operation of cutting the work piece (col. 3, lines 7-11).

It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

Claim Rejections - 35 USC § 103

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11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being obvious over Olsen '126. Olsen '126 discloses the claimed invention except for the presence of two rails. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include two rails oriented parallel to one another in lieu of a single rail for the purpose of enhancing the drive power capacity of the apparatus because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being obvious over Zeldman '536. Zeldman '536 discloses the claimed invention except for the presence of two rails. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include two rails oriented parallel to one another in lieu of a single rail for the purpose of enhancing the drive power capacity of the apparatus because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

14. Claim 7 is rejected under 35 U.S.C. 103(a) as being obvious over Brock et al. '865. Brock et al. '865 discloses the claimed invention except for the presence of two rails. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include two rails oriented parallel to one another in lieu of a single rail for the purpose of enhancing the drive power capacity of the apparatus because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

15. Claims 7 and 21 are rejected under 35 U.S.C. 103(a) as being obvious over Cable et al. '542. Cable et al. '542 discloses the claimed invention except for the presence of two rails. It

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would have been obvious to one having ordinary skill in the art at the time the invention was made to include two rails oriented parallel to one another in lieu of a single rail for the purpose of enhancing the capacity of the manufacturing operations performed by the apparatus because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

16. Claims 1,2,4,6,7,10,13-16,18,20,21 and 26-28 are rejected under 35 U.S.C. 103(a) as being obvious over Adams '436. Adams '436 shows in Figures 1-5b an apparatus comprising a track assembly (11) adapted to the work piece (12,14) via fasteners (28) and mounting steps (25) and vacuum pads (29) including at least one rail having an integrally-formed rack with a plurality of apertures (157) extending along a pitch line that at least approximates the longitudinally-extending neutral axis. Adams '436 shows the track being substantially flat and having a width substantially greater than a thickness causing a stiffer bending moment that extends along the thickness direction and a more pliable bending moment that extends along the width direction. Adams '436 shows a carriage (15) including a tool support (62 in Fig. 17) adapted to receive a manufacturing drill tool (17) moveably (col. 3, lines 20-27) coupled to the track assembly and moveable relative to the translational axis (x-axis) and an opposing-force support assembly (22) coupled to the carriage and adapted to be secured to the work piece to at least partially counterbalance a manufacturing force exerted on the work piece by the manufacturing tool (col. 3, lines 20-37). Adams '436 shows the carriage including a drive assembly (144,145,147) having a drive motor (144) operatively engaging the track and adapted to drive the carriage along the track (col. 7, line 73 through col. 8, line 38).

It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

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Adams '436 does not disclose expressly that the plurality of apertures are tapered/wedge-shaped. Instead, Adams '436 is silent to the shape of the plurality of apertures. At the time of the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to select a tapered/wedge-shaped because Applicant has not disclosed that the tapered/wedge-shaped provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the apparatus of Adams '436, and Applicant's apparatus to perform equally well with either the shape taught by Adams '436 or the claimed tapered/wedge-shaped because both shapes provide the necessary space for engagement with the drive member.

Furthermore, Applicant does not provide any criticality or unexpected results for the plurality of apertures having a tapered/wedge-shape as recited in claims 1,4,15 and 18.

17. Claims 1,2,4,6-12,14-16,18,20-25,27-31,33,35-40 and 43-48 are rejected under 35 U.S.C. 103(a) as being obvious over Boyl-Davis et al. '328.

The applied reference has a common "inventor" with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the

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reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Boyl-Davis et al. '328 shows in Figures 1-7 an apparatus (20) comprising a track assembly (22,24,28,28') adapted to the work piece via a plurality of vacuum cups (26) including two rails (22,24) oriented approximately parallel to one another and having an integrally-formed rack (38) with a plurality of apertures (for engagement with pinion gear) extending along a pitch line that at least approximates the longitudinally-extending neutral axis. Boyl-Davis et al. '328 shows the track being substantially flat and having a width substantially greater than a thickness causing a stiffer bending moment that extends along the thickness direction and a more pliable bending moment that extends along the width direction (col. 4, line 44 through col. 5, line 4). Boyl-Davis et al. '328 shows a carriage (30) including a tool support (70) adapted to receive a manufacturing drill tool (80) moveably coupled to the track assembly and moveable relative to the translational axis (x-axis). Boyl-Davis et al. '328 shows the carriage including a drive assembly adapted to drive the carriage having a drive motor (40) coupled to a drive gear (44) operably engaging the rack (col. 5, line 51-59). Boyl-Davis et al. '328 shows the carriage including an x-axis portion (30) moveable coupled to the track assembly and a y-axis portion (50) moveably coupled to the x-axis portion and moveable with respect to the x-axis portion along the y-axis oriented transversely to the track assembly (col. 6, line 8-24).

It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

Boyl-Davis et al. '328 does not disclose expressly that the plurality of apertures are tapered/wedge-shaped. Instead, Boyl-Davis et al. '328 is silent to the shape of the plurality of apertures (col. 5, lines 50-64). At the time of the invention was made, it would have been an

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obvious matter of design choice to a person of ordinary skill in the art to select a tapered/wedge-shaped aperture because Applicant has not disclosed that the tapered/wedge-shaped aperture provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the apparatus of Boyl-Davis et al. '328, and Applicant's apparatus to perform equally well with either the undisclosed shaped aperture taught by Boyl-Davis et al. '328 or the claimed tapered/wedge-shaped because both aperture shapes provide the necessary space for engagement with the drive member.

18. Claims 13,26,41 and 42 are rejected under 35 U.S.C. 103(a) as being obvious over Boyl-Davis et al. '328 in view of Adams '436. Boyl-Davis et al. '328 lacks the reference of an opposing-force support member. Adams '436 shows an opposing-force support assembly (22) coupled to the carriage and adapted to be secured to the work piece to at least partially counterbalance a manufacturing force exerted on the work piece by the manufacturing tool (col. 3, lines 20-37). In view of this teaching Adams '436, it would have been obvious to include an opposing-force support member of Adams '436 to the carriage of Boyl-Davis et al. '328 to provide a more secure connection between the apparatus and work piece thus increasing the stabilization of the manufacturing operation resulting in quicker, more precise drilling holes.

19. Claims 19 and 34 are rejected under 35 U.S.C. 103(a) as being obvious over Boyl-Davis et al. '328. Boyl-Davis et al. '328 does not disclose expressly that the plurality of apertures are conically-shaped. Instead, Boyl-Davis et al. '328 is silent to the shape of the plurality of apertures (col. 5, lines 50-64). At the time of the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to select a conically-shaped aperture because Applicant has not disclosed that the tapered/wedge-shaped aperture provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the apparatus of Boyl-Davis et al.

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'328, and Applicant's apparatus to perform equally well with either the undisclosed shaped aperture taught by Boyl-Davis et al. '328 or the claimed conically-shaped aperture because both aperture shapes provide the necessary space for engagement with the drive member.

Allowable Subject Matter

20. The indicated allowability of claims 4,5,18,19,33 and 34 is withdrawn in view of the newly discovered reference(s) to Cable et al. '542. Rejections based on the newly cited reference(s) are as described above.

Response to Arguments

21. Applicant's arguments with respect to claims 1-2,4-16,18-31 and 33-42 have been considered but are moot in view of the new ground(s) of rejection as described herein.

Conclusion

22. Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mr. Boyer D. Ashley, may be reached at 571-272-4502.


In order to reduce pendency and avoid potential delays, group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 571-273-8300. This practice may be used for filling papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account.

Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.



MWT
Examiner
5 March 2006

BOYER D. ASHLEY
SUPERVISORY PATENT EXAMINER





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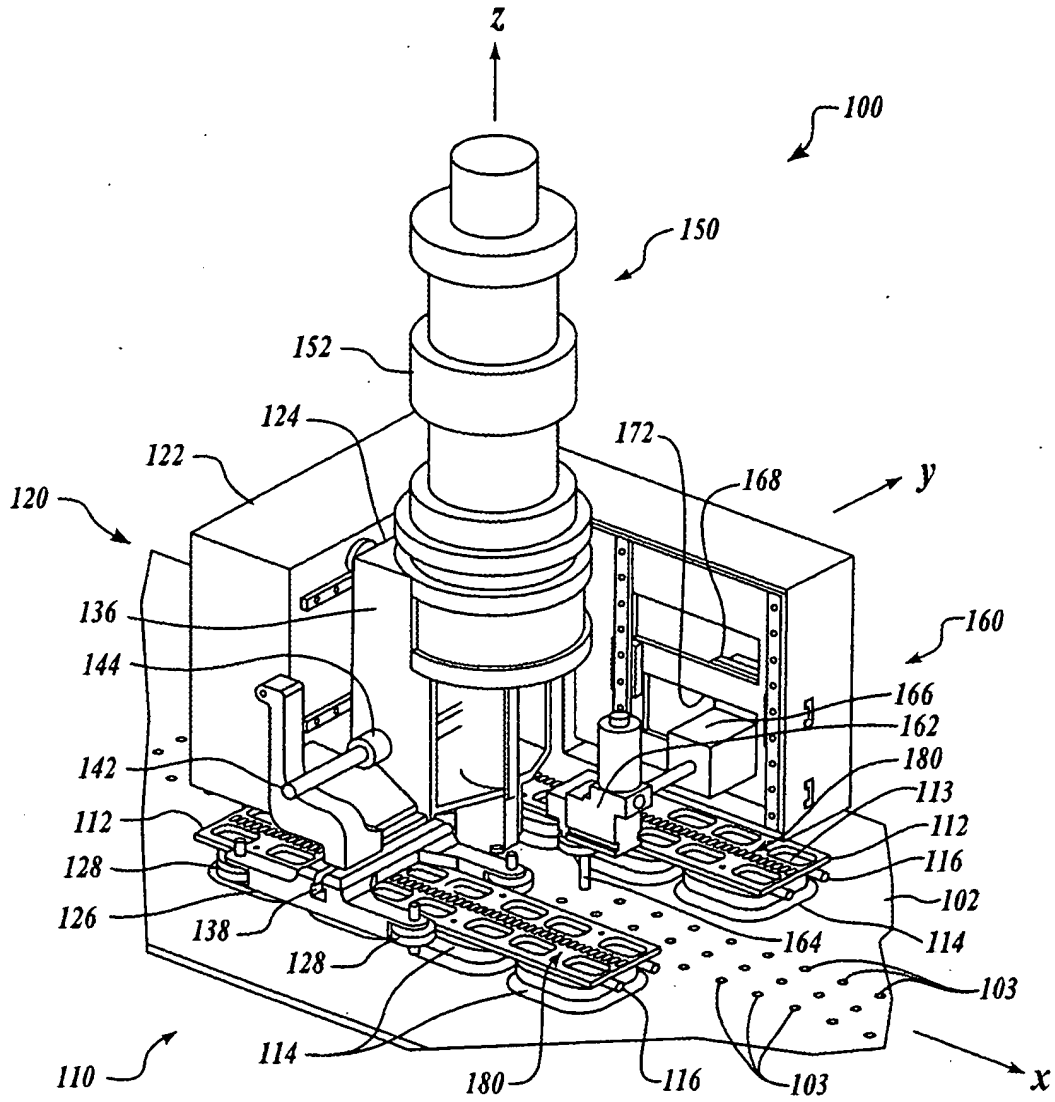


Fig. 1

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Fig. 2

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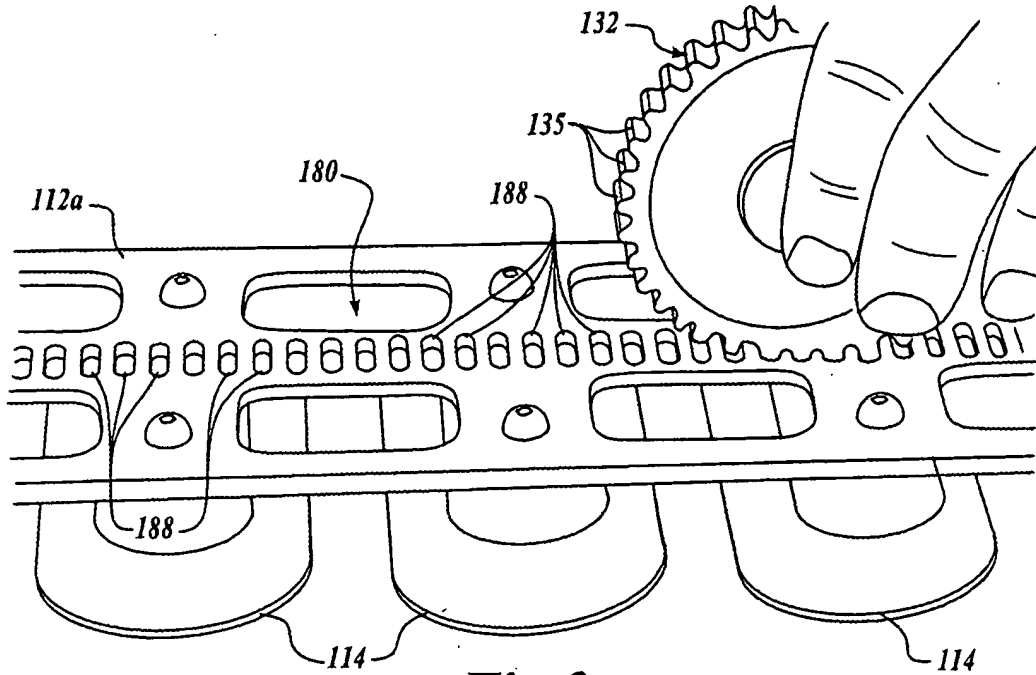


Fig. 3

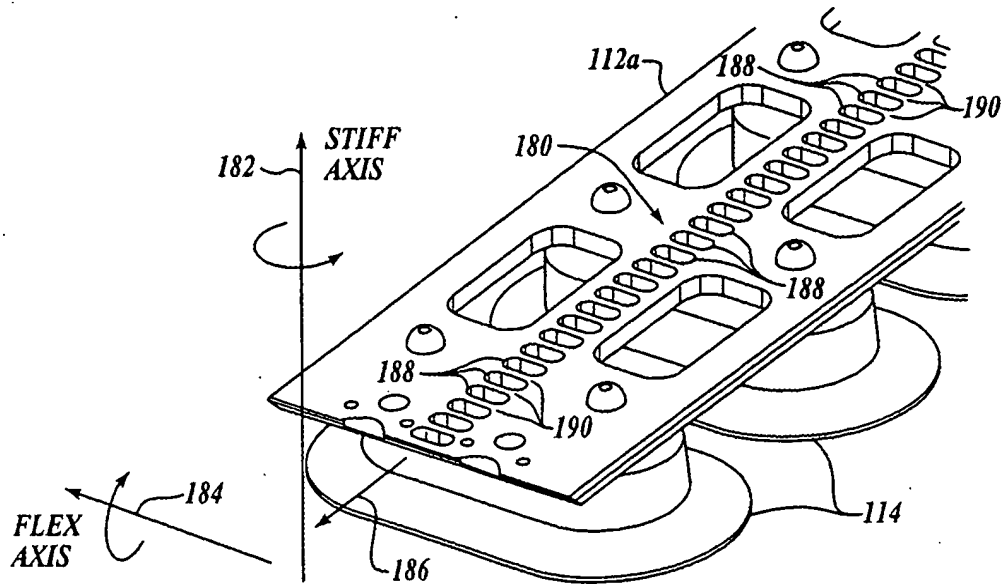


Fig. 4

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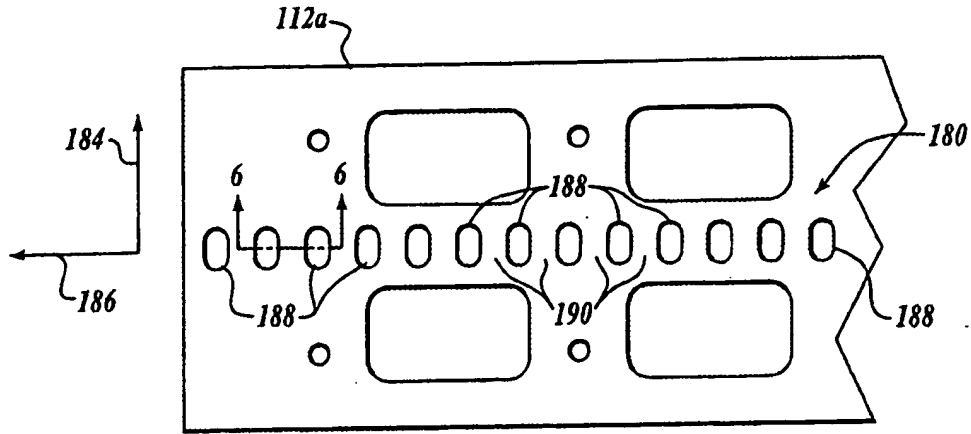


Fig. 5

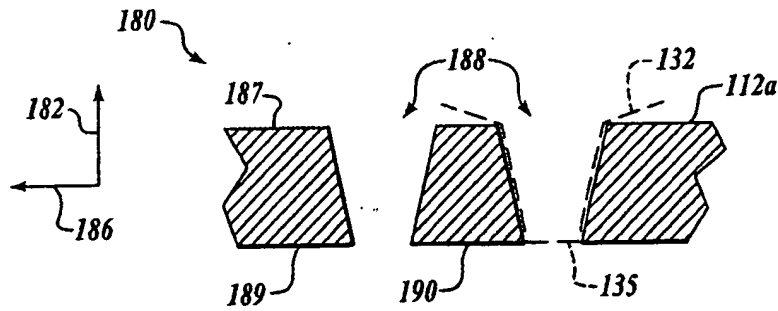


Fig. 6

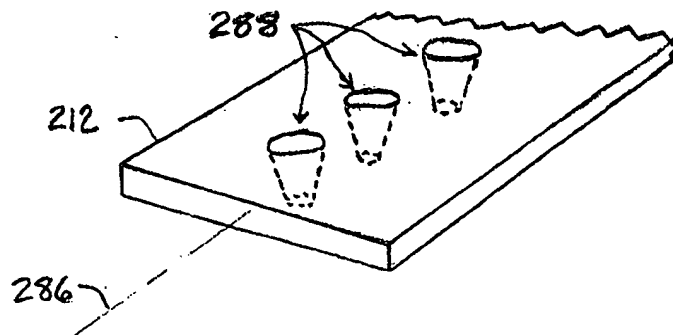


Fig. 7

ENTER 02/28/06 *MIT*